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## The High Fiber Diet

**Dietary fiber** consists of all ingested plant foods that cannot be digested. It is not one chemical substance, but includes a variety of plant cell wall materials. Cellulose, hemicellulose and lignin are found mainly in vegetables and grains. Pectin, gum and mucilage are found in fruits, legumes, oats and barley. While all of these resist digestion by enzymes of the human intestine, some of these are partially fermented in the colon by bacteria, while the remainder are excreted unchanged in the stool.

**Fiber** absorbs water; increasing dietary fiber therefore pulls more water into the intestine and increases the water content of the stool. In this manner, a high-fiber diet increases stool bulk and stool weight, softens the stool consistency, and by stimulating intestinal motility, produces more frequent stools. Although increased dietary fiber may slow stomach emptying, it shortens the overall transit time through the intestine. Once the undigested fiber reaches the colon, the fermentation of the fiber by bacteria in the colon often leads to increased gas production. As a result, a high fiber diet may be associated with bloating and flatulence. Very high dietary fiber may bind minerals, resulting in a reduced absorption of calcium, zinc and iron.

A **high-fiber diet** is used in the treatment of chronic constipation, hemorrhoids, chronic recurrent diverticulitis (not simple diverticulosis), and the irritable bowel syndrome, especially when cramping, bloating and constipation are major symptoms. Increasing stool bulk and softening stool consistency alleviates the discomfort associated with the passage of small, hard stools. When diarrhea results from the irritable bowel syndrome, a high fiber intake is often successful in controlling symptoms, but otherwise, a high-fiber diet is generally not recommended in the treatment of diarrhea. Caution should be taken to increase fluid intake concurrently with increasing fiber. Insufficient fluid may result in worsening constipation or even intestinal obstruction by the increased stool bulk. It is recommended that 8 to 12 glasses of water or other clear fluid be taken as part of a high fiber diet.

### GUIDELINES TO FOOD SELECTIONS

#### High-Fiber Foods

**Breads:** whole grain, especially 100% whole wheat, cracked wheat or rye; raisin bread; bran muffins; graham crackers; cornbread

**Cereals:** whole grain, such as shredded wheat, wheat germ, bran flakes, granenuts; Uncle Sam with flax seeds; Ralston; wheat or oat bran cereals containing fruit, nuts, seeds, coconut

**Vegetables:** artichokes, potato with skin, green peas, brussels sprouts, sauerkraut, string beans, lima beans, winter squash, dried beans (kidney, lentils, split pea), broccoli, collards, corn, parsnips, spinach, soybean sprouts, popcorn

**Fruit:** dates, pear with skin, apple, banana, orange, raisin, avocado, blueberries, blackberries, figs, apricots

**Nuts:** all, especially brazil nuts, sunflower seeds, walnuts, coconut, pecans, peanuts, almonds

**Medications:** psyllium seed (Metamucil, Effersyllium, FiberCon, bran wafers, etc.); partially hydrolyzed guar gum (Benefiber)

#### Foods to Avoid

**None:** other cereals, fruits and vegetables are lower in fiber content, but are not specifically restricted